section of a polypus removed from her nose. It was fixed in alcohol, then decalcified in nitric acid, embedded in celloidin, and stained in Ehrlich's acid hæmatoxylin, with an eosin counterstain.

Clinically it was most deceptive. When the wire came in contact with the calcareous material with which it was infiltrated I supposed that it was bony in character, as I had already removed dead bone from the same nostril.

In the numerous sections which I have cut there has been absolutely no evidence of anything in the nature of a true myxomatous tumor; on the other hand, mucoid degeneration was commonly found. In both these very typical cases which I have detailed the growth was associated with the presence of dead bone.

My object in presenting this present incomplete study of the subject is to add my mite to the work of those interested in establishing our clinical work on a scientific basis. I believe that if only sufficient attention is persistently directed to this important subject the heretofore prevailing laxity in nomenclature will disappear; and when rhinologists have learned that nasal polypi are symptoms of underlying conditions, and not "tumors," the mere removal of which will result in a complete cure, it will redound greatly not only to the credit of the profession, but to the benefit of the patient, by lessening, if not altogether abolishing, the frequent recurrence of polypi after their removal by operation.

HYPERTROPHIC TUBERCULOSIS OF THE LARYNX.

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The classical picture of laryngeal tuberculosis makes the recognition of this condition, as a rule, quite easy. The history of the case, the fact that there is in almost every case a pulmonary involvement, the finding of tubercle bacilli in the sputum or in scrapings from the larynx, the well-marked constitutional symptoms, and the steady advance of the pulmonary symptoms are factors which always clear up the diagnosis. Add to this the typical changes in the larynx, the infiltration, aphonia, and characteristic ulceration, and we have a symptom-complex which is practically peculiar to laryngeal tuberculosis only. The character of the *ulceration* particularly is the symptom in the clinical presentation which is peculiar to the type of tuberculosis of the larynx usually observed.

Hypertrophic or, as it may perhaps properly be called, hyperplastic tuberculosis of the larynx, which will be the only form of the disease considered in this paper, presents an altogether different clinical picture.

The following case observed by the writer is a good illustration of this very unusual type of laryngeal tuberculosis. This case is of particular interest because of the great diversity of opinion in regard to the patient's condition. He was seen by a number of laryngologists in different parts of the country and different diagnoses were made.

Mr. M. I., aged forty years, native of Germany, merchant, married, two children, consulted the writer February 19, 1901, for hoarseness that had existed for a year. His family history was negative, there having been no cases of tuberculosis so far as he knew. He had always been subject to colds. Syphilis was denied. His physical condition at the time was excellent, weight about 175 pounds, and he had only lost about five pounds during the past six months. He was very hoarse, the voice being decidedly weak; in fact, the aphonia was nearly complete. His appetite was excellent, and he had no night-sweats. He coughed very little at this time, and several careful examinations of the lungs gave absolutely negative results.

We did not discover tubercle bacilli in the sputum, but Dr. Roarke, of Troy, who had also examined his larynx and made a diagnosis of tuberculosis, told me that a few had been found in a former examination. His nose, nasopharynx, and pharynx, with the exception of a chronic follicular pharyngitis, did not show any particular changes. His larynx, however, presented the following interesting condition: The mucosa was generally somewhat reddened, with a well-marked thickening in the interarytenoid space, which was firm to the touch. Both arytenoids were thickened and infiltrated, this being more marked in the left than the right. Both cords were thickened, and there was a circumscribed thickening of considerable size on the left cord near the processus vocalis. There were circumscribed hypertrophied areas on both ventricular bands, with broad bases, not presenting the appearance of new-growths, but rather of hyperplasia of the tissues. They were covered with a perfectly intact, smooth mucous membrane, and were of a grayish-red color. This was one of the interesting features of the case. The epiglottis was not involved, nor did the process appear to extend below the cords. There was absolutely no ulceration anywhere in the larynx. A diagnosis of laryngeal tuberculosis was made by the writer, in spite of the atypical laryngeal condition, and the negative examination of the lungs. The patient was told that he had a good chance for recovery in Denver. This favorable prognosis was given because his lungs at this time did not show any evidence of tuberculosis on physical examination. He started for Denver, but on the way consulted a well-known laryngologist of the West, who gave it as his opinion that the case was *not* tuberculous. I believe he was given potassium iodide for some time, with local treatment, but did not improve. (I would like to state at this time that this paper is not written in a spirit of criticism. The physician who examined him in the West did not know that tubercle bacilli had been found in the sputum. Nobody not knowing this could have made a positive diagnosis. Because, however, this case has already been published elsewhere as one of pachydermia laryngis, and on account of the different diagnoses that have been made, but particularly because the outcome of the case justified the diagnosis of tuberculosis, a thorough and impartial presentation of its clinical history was considered important.) The patient then returned to New York, where he was under the care of a laryngologist, and was seen by a number of others, one or two of whom agreed with the writer's diagnosis. The physician who treated him in New York reported the case as one of pachydermia laryngis (*New York Medicinische Monatsschrift*, November, 1901, p. 528). In this article he states that a laryngeal ulcer was discovered in Albany. This is an erroneous statement, because at no time while the patient was under the observation of either Dr. Roarke or the writer was there any evidence at all of ulceration. Repeated examinations of the sputum in New York failed to show the presence of tubercle bacilli. This fact was stated in a letter to the author by the patient's physician there, and the statement was also made "that as there were no signs over the chest, the case, if not pachydermia, could only have been primary tuberculosis of the larynx." The patient grew steadily worse, and was finally sent to Saranac Lake in June, 1901, where he was under the care of Drs. Trudeau and Baldwin. He died there August 4th, with well-marked laryngeal and pulmonary tuberculosis.

In answer to inquiries in regard to the patient's condition at Saranac, letters were received from Drs. Trudeau and Baldwin, from which I will give abstracts. (Dr. Trudeau's letter was in answer to an inquiry whether in his experience tuberculosis of the larynx often developed after pachydermia.) "I often find," he wrote, "that pachydermia laryngis coexists with tuberculous laryngitis, but I don't think I have ever had much reason to believe that the warty growths were anything more than a *complication* of the original tuberculous process." Dr. Baldwin sent me the following record of the patient's condition when seen by him June 10, 1901: "Advanced pulmonary and laryngeal tuberculosis, dulness on right apex, with prolonged expiration, moist râles to fourth rib." I also quote the following from his letter: "The patient came to me with fully developed pulmonary and laryngeal tuberculosis on June 10th, and died August 4th. Your letter indicates that he had more signs on left side of the larynx; by June, however, the right arytenoid and cord were more infiltrated, and there was some ulceration of the cords. He died without ulceration of the arytenoids or epiglottis." The writer has been careful *not* to call this even a *probable* case of primary tuberculosis of the larynx, although in other parts of the body this hypertrophic form of the disease sometimes precedes the lung involvement. In the larynx, however, primary tuberculosis is excessively rare, and I have always been of the opinion that it did not occur, because post-mortem findings have demonstrated the fact over and over again that tuberculous processes in the lungs *had* existed in cases of laryngeal tuberculosis, even though they were not discovered during life in the most careful physical examination. One of the only positive cases of primary laryngeal tuberculosis that I have been able to find in the literature is the case reported by Fraenkel (see

Duesberg's article[30]). In this case the patient had been treated for five years for laryngeal tuberculosis. At the autopsy neither in the lungs nor in any other organ, except the larynx, was there any evidence of tuberculosis. This is one of the few cases on record in which the diagnosis was proved post-mortem. Cohen has reported three cases that were also probably primary. A résumé of the clinical history of this case brings out some interesting points, *i. e.*, a tuberculous condition of the larynx that existed for a year and a half before any ulceration developed; the normal physical examination of the lungs up to the time the patient went to Saranac, the well-marked circumscribed hypertrophies of the ventricular bands, the decided thickened areas on the vocal cords, and the swelling of the arytenoids. This was of the nature of a thickening of the tissues, and not the œdema usually found. Taking all these facts into consideration, I believe a diagnosis of hypertrophic tuberculosis was justified.

DIAGNOSIS. In considering the diagnosis of this unusual form of laryngeal phthisis, we must first dispose of the differential diagnosis of the writer's case from pachydermia, particularly as it was published as a case of pachydermia. The fact that a thickening of the vocal cords existed near the processus vocalis, a common seat for pachydermic masses, was *not* an argument for pachydermia in this case, because there was not only not the usual depression on the surface of the nodule, which is caused by the pressure of a nodule directly opposite on the other cord during phonation ("pachydermische dellen"), and which is characteristic of pachydermia, but, in fact, a node on the other cord opposite the one on the left cord did *not* exist. We have abundant authority in the literature of the subject for this characteristic appearance of the pachydermic node. Fraenkel,[24] Virchow, Symonds,[26] and others have described it as characteristic. Pathologically, pachydermia cannot be considered a condition *sui generis*, but merely a result of the chronic laryngitis of alcoholics, inveterate smokers, or a part of the clinical picture of tuberculosis or syphilis. I believe alcohol and tobacco are the two most important factors in producing pachydermia. (The writer's patient was a man of excellent habits.) Great stress is laid upon this by Sturmann.[25] Really only the diffuse form of pachydermia need be considered in the writer's case. In this form the products of the hypertrophy of the epithelium very often break down rather easily, forming cracks or superficial ulcers on the surface of the pachydermic nodes. Habermann[27] mentions the frequency with which this ulceration occurs in pachydermia. He found it twenty-one times in fifteen larynges. Moll[23] considers pachydermia simply a form of chronic catarrhal laryngitis. Zwillinger[28] thinks it is akin to leukokeratosis, and claims that the two conditions have the same etiology, and are identical clinically and anatomically. To conclude the differential diagnosis of pachydermia and hypertrophic tuberculosis, then, we may *exclude* pachydermia when the characteristic circumscribed hyperplasia of the ventricular bands or other parts of the larynx is present, when we do not get a history of excessive drinking and smoking, when syphilis can be excluded, when the depression on the pachydermic node is absent (this was always present in cases observed by the writer), and when all other factors that would cause a chronic laryngitis can be excluded. In the writer's case the condition certainly simulated a diffuse pachydermia, but, as later developments proved, it was *not* pachydermia but *tuberculosis* all the time. It is much more difficult to make a diagnosis in a case in which carcinoma develops from or coexists with an apparent condition of pachydermia. Fraenkel,[29] in his able article, thoroughly discusses this point, and in conclusion states "that carcinoma develops not infrequently from pachydermia." He reports cases to prove this statement. General or circumscribed hyperplasia of certain parts of the larynx is characteristic of the form of tuberculosis under discussion, and this hyperplasia of the tissues occurs in other parts of the body, as well as a manifestation of hyperplastic tuberculosis. Lartigau,[30] in his article "Hyperplastic Tuberculosis of the Intestine," etc., mentions this as the fundamental lesion. Some of the most interesting and characteristic features of the intestinal form are the polypoid and papillomatous formations mentioned by Pilliet (Lartigau). These tumor-like formations are not very uncommon in the larynx, and a number of the recorded cases unquestionably belong to this type of laryngeal phthisis. In order to get a thorough idea of the diagnosis of this interesting form of laryngeal tuberculosis, it will be necessary to briefly review the cases in the literature. There are only a few on record with the title "Hyperplastic Tuberculosis," although I have been able to find a number of others that belong in this classification. If, for example, we give the term hypertrophic or hyperplastic tuberculosis its widest meaning, we must include certain forms of tuberculous tumor formations, in which the tumors are covered with intact mucous surfaces (although some ulceration may be present in some other part of the larynx), and in which the tumor developed *before* the ulceration. I do not think that tuberculous granulomata, for example, which develop at the site of an ulcer and which break down easily, belong in this class. I quite agree with Schech's[31] statement that "tumors should only be called tuberculous in which earlier ulceration at the site of the tumor can be excluded."

The following classification of hypertrophic tuberculosis of the larynx is suggested by the writer as a convenient one. No arbitrary classification can be made. It is, of course, understood that no case will be included in which a positive diagnosis was not made. The following cases, although not entirely complete, are practically all that I could find in a thorough search of the literature in which the diagnosis of tuberculosis was proved:

Class I. Cases in which the characteristic changes in the larynx consist of either a marked hypertrophy or hyperplasia of the tissues, or in which tumor-like formations *without* ulceration occur.

Class II. Distinct tumors, usually covered with intact mucous surfaces, and called by the French the "type d'Avellis," which seem frequently to originate in the ventriculus Morgagni. These tumors may or may not be pedunculated.

CLASS I. The following rare cases, of which I will give brief abstracts, belong in this class:

John N. Mackenzie[1] reports two cases observed by him in the Rudolph Hospital, Vienna. The specimens, which were removed at autopsies by Dr. Hans Chiari, were examined by Mackenzie microscopically: 1. Tuberculous tumor of the trachea. Pharynx, larynx, and trachea free from ulceration. A circumscribed tumor was found in the trachea, about 1½ cm. above the bifurcation, and was about the size of a bean. A similar one was found in the pericardium. Microscopically the tumors consisted of tuberculous nodules set in a network of hypertrophied connective tissue. 2. Tuberculous growths of the vestibulum laryngis. Patient died of pulmonary tuberculosis. The epiglottis, ary-epiglottic folds, and ventricular bands presented a remarkable granular appearance, due to the presence of small, smooth, dense, nodular growths. No trace of ulceration in the pharynx, larynx, or trachea. Microscopic examination disclosed the same appearances as in Case 1. He also describes tuberculosis of the laryngeal muscles, and reports a case in which large well-marked tubercles were found embedded in the muscular tissue and absolutely unconnected with the tuberculous infiltration of that part of the larynx. This case is extremely rare and bears out Heinze's similar investigations.

Foa's[2] case. Foa reports a rare case of this form of tuberculosis. I will give only the post-mortem findings. There was well-marked evidence of pulmonary tuberculosis as well as of the ileum and mesenteric lymph glands. In the larynx, at the base of the epiglottis, on its inferior surface, in the region of the arytenoids, and on the cords, there were numerous eminences, from 2 to 4 mm. long and 2 to 3 mm. wide. Absolutely no ulceration of the laryngeal mucosa. On microscopic examination the vegetations were made up mainly of connective tissue, and contained some giant cells and epithelioid cells. An inflammatory condition of the mucosa, with a well-marked hyperplasia, could be made out. Tubercle bacilli were found in portions of the tissue removed.

Lermoyez's[3] case. A man, aged forty years, entered the Hospital Bichat in Gougenheim's service. Had had severe hæmoptysis. There was difficulty in breathing, marked aphonia, and inspiratory dyspnœa. A large mass was seen in the larynx in the region of the cords. It was difficult to determine the exact point of origin. During inspiration the growth descended below the glottis. A tracheotomy was performed, and a large subglottic growth similar to a polypus was found. Patient died five days after the operation. At the autopsy a large mass, attached in the angle of insertion of the right cord, was found. This is rare in the history of tuberculous vegetations. There was tumefaction of the left cord and beginning vegetations.

Ariza[4] has contributed several articles on this subject. In the first he simply and very incompletely reviews the literature, and describes the vegetative or hypertrophic form of laryngeal tuberculosis. There are sometimes enormous localized hypertrophies of the tissues. He also refers to the fact that there may be no ulceration in these cases. In the second article he mentions the great difficulty in making a diagnosis, and that the hypertrophy is seen chiefly in the ventricular bands and cords, and may be so extensive as to make tracheotomy imperative.

Doleris'[5] case. The patient, aged sixty-three years, had severe hæmoptysis and dyspnœa at night. Complete aphonia had existed six months. Death occurred suddenly, with symptoms of asphyxia. At the autopsy the following interesting changes were found in the larynx: There was marked hypertrophy of the entire mucous membrane, the thickening being so great that the lumen of the larynx was reduced to one-quarter the normal size; the cords were effaced. The epiglottis and aryepiglottic folds were thickened and there was some subglottic hypertrophy. Mucous membrane was very pale. There was slight ulceration in the region of the right ventricular band. Pulmonary tuberculosis was also found. There was marked sclerosis of areas of lung tissue and a formation of fibrous tissue. A cavity existed in the right lung as large as a small orange.

This is, perhaps, the most marked example of hypertrophic tuberculosis of the larynx on record.

Schnitzler's's[6] case. The patient, a young man, came to Schnitzler's clinic for the relief of urgent dyspnœa. Laryngeal examination showed the presence of several grayish-white tumors varying in size from a bean to a hazel-nut, not ulcerated, situated mainly in the ventricles of Morgagni, and almost completely filling the upper part of the larynx. Schnitzler makes the statement in this article that, laryngoscopically, these tuberculous tumors had probably never before been observed, and later, in another article (*Wiener med. Presse*, November 16, 1884), he questions Dr. John N. Mackenzie's right of priority in describing such tuberculous tumors. Mackenzie's cases were certainly published before Schnitzler described the above case. It was seen by Schnitzler (see Crepon's article) in 1882, but it was not reported until

1884. Tracheotomy was performed by Billroth in Schnitzler's case, and then by an endolaryngeal operation the tumors were removed. Microscopic examination proved the diagnosis.

Dehio's[7] case. Tumor of the larynx; no ulceration. Tumor attached to left ventricular band by a broad base, covering the whole band. Great thickening of the right ventricular band. On microscopic examination no evidence was found of caseation of the tubercles. There were bacilli in the tissue removed for examination.

Henning's[8] case. Man, aged fifty-two years; good family history. In the region of the left cord there was a round, smooth tumor, with a broad base, and covered with normal mucous membrane. The tumor covered the posterior two-thirds of the left cord, left ventricular band, and ventriculus Morgagni; probably originated in the ventricle. Laryngotracheotomy was performed. Diagnosis was proved by the microscopic examination.

Koch's[9] case. Tuberculous tumor of the larynx removed by laryngotracheotomy. Diagnosis verified by microscopic examination.

Hopmann's[10] cases. (Reported by Karl Becker.) 1. Tuberculous tumor of the anterior commissure; laryngotomy. 2. Tumors of the ventricular bands and cords; laryngotomy; death in two months from pulmonary tuberculosis. 3. Tumor of the anterior part of the right cord. Two operations were performed, and eleven years after the patient, who was a minister, had suffered no recurrence and could use his voice both for speaking and singing. (Remarkable case.) 4. Tumor nodules of the anterior part of the cords and the epiglottis. 5. Large tumor of the anterior commissure; pulmonary tuberculosis; operation followed by cure.

Küster's[11] case. Woman, aged forty-six years; prominent tumor in the anterior commissure. There was very slight ulceration in the larynx; a laryngotracheotomy was performed.

Josephsohn's[12] case. Reported as a case of primary tuberculosis, but as there was no autopsy it cannot be so called. Girl, aged twelve years, with marked tumefaction of the epiglottis and hard infiltration, with tumefaction of the arytenoids. Symptoms on the part of the lungs did not appear until shortly before death. There was slight ulceration on the posterior wall of the larynx.

Kidd's case is not included in this classification because there was some doubt about the diagnosis.

Castex[13] has called attention to certain nodules occurring on the cords, to which he has given the name nodular tuberculosis. They frequently become tuberculous and are grayish-red in color.

Class II. While this class of pedunculated tumors can, perhaps, not be called typical examples of hypertrophic tuberculosis, they must be considered a form of the disease. Lartigau includes papillomatous excrescences and polypoid formations as a type of hyperplastic tuberculosis of the intestine.

Billroth's[14] case. Two pedunculated papillary excrescences of the left cord, with a subglottic tumor. A diagnosis of epithelioma was made, but after the growths were removed tumors were found to be tuberculous; no ulceration in the larynx.

Panzer's[15] cases. (Reports three cases.) Two apparently ordinary polypi of the cords were found, on histological examination, to be tuberculous. In the third case there were papillary excrescences on the left vocal cord. In two of the cases the tumors occurred in otherwise perfectly healthy larynges.

Clark's[16] case. Woman, aged twenty-one years; no evidence of pulmonary tuberculosis. Had been hoarse for three years. Pedunculated tumor in the larynx attached to the left ventricular band. Diagnosis proved after removal of growth. No recurrence after a year and a half.

Kirkpatrick's[17] case. Papillomatous mass in the interarytenoid fold. Diagnosis proved microscopically.

Bronner's[18] case. Pedunculated new-growth attached to the left cord in a tuberculous subject. Found to be tuberculous on microscopic examination.

Sachs'[19] cases. Two cases of laryngeal tumors with normal lungs. (He considered them primary, but I could find no record of autopsies.)

One of the most important works on the subject of tuberculous tumors has been written by Avellis.[20] He has reported thirteen cases observed by himself. There are cases belonging to both classes. The tumors in his cases were circumscribed, and there was no laryngeal ulceration. He states that this form is probably sometimes primary. In this connection a series of cases studied by Moser[21] is of interest. He describes cases in which practically the only evidence of laryngeal tuberculosis was the thickened and nodular epiglottis. As a rule, there was either no ulceration or very little in the larynx. Sometimes this same thickening was noticed in the larynx. Some of these cases are undoubtedly examples of hyperplastic tuberculosis. A case of lupus of the epiglottis has recently been reported by Chambers (*Laryngoscope*, February, 1903), which simulates somewhat Moser's cases. It is of interest in this connection, because a section was sent to Dr. A. O. J. Kelly, of Philadelphia, who reported that the case *was* one of hyperplastic tuberculosis. Jonathan Wright was more inclined to the opinion that it was lupus. Gougenheim and Tessier,[22] in their admirable work, were the first to describe cases occurring in children, as "pseudopolypoid scleropapillary" forms. "La texture est toujours lamieme; ce sont les hypertrophies papillares, developpées sur la muqueuse tuberculeuse à l'occasion action irritative ou inflammatoire." These cases they claim may sometimes be primary. As before stated, however, I believe that primary cases of this or any other form of laryngeal tuberculosis occur with extreme rarity. Fraenkel's case is one of the only ones I could find in which the diagnosis was verified by autopsy. It is possible that Hopmann's third case, in which there was no recurrence for over eleven years after the removal of a tuberculous growth, was primary. It is more than likely, if the lungs had been involved in this case, that the patient could not have lived so long without a recurrence. Dehio's case may also have been primary. There were, however, no autopsies in these two cases.

A study of the cases described in this paper would appear to the writer sufficient to clear up the diagnosis of the different forms of hyperplastic tuberculosis. A histological examination will usually settle all doubt, although there are cases in which the histological structure simulates sarcoma. Attention has been called by Koschier to the occurrence of rhinoscleroma associated with tuberculous infiltration of the pharynx and of both arytenoids. In connection with the diagnosis of the writer's case, this condition need hardly be considered. In the first place, rhinoscleroma is excessively rare in this country, and, secondly, primary scleroma of the larynx is very rare. In almost every case the characteristic lesions in the nose will be found. Schrötter[35] has also called attention to the occurrence together of scleroma and tuberculosis. Hypertrophic tuberculosis must also be differentiated from lupus, syphilis, sarcoma, and carcinoma. Lupus, as stated by Emil Mayer, *is* tuberculosis, but occurs in another form. It differs from the form of tuberculosis under discussion in that in the larynx it usually involves the epiglottis. Primary laryngeal lupus is, too, extremely rare, although it has been mentioned by Mayer (*New York Medical Journal*, 1898). Macroscopically, lupus tissue has rather a different appearance. There are usually pale, elevated nodules, which sometimes ulcerate at their apices. These ulcers heal very slowly, and as one cicatrix forms another nodule may break down, giving a characteristic appearance which differs essentially from that of hyperplastic tuberculosis. A histological examination of lupus tissue is not always of much help, and the diagnosis must often be made by exclusion. The fact that the lingual surface of the epiglottis is usually affected first and the very slow course of the disease will assist in clearing up the diagnosis. Then, of course, in the vast majority of the cases lupus is a secondary process. True syphilitic tumors (syphilomata), when they occur in the larynx, present many more diagnostic difficulties. There is a form of syphilitic tumor which I have observed several times, which, like the tuberculous tumor, may or not be pedunculated, is covered with an intact mucous membrane, and may not break down for a long time. Such cases are extremely difficult to differentiate clinically from hyperplastic tuberculosis. A history of syphilis can, however, usually be obtained, and, even if not, the administration of potassium iodide will settle all doubt. Syphilitic hyperplasia, which is made up simply of granulation tissue, quickly breaks down, forming the typical ulceration. This is true also of the syphilitic granuloma, which is simply an inflammatory condition that develops around an ulcerated surface, and of the gumma. From beginning carcinoma and sarcoma the hyperplastic form of tuberculosis can be differentiated by the histological examination. The further course of the disease and the typical laryngeal appearance in advanced carcinoma will clear up the diagnosis.

Exception may be taken to the writer's classification of hyperplastic tuberculosis. If we were to include cases in which the laryngeal changes consisted simply of circumscribed hyperplasia or hypertrophy of parts of the mucosa we would have practically only Mackenzie's second case, Doleris' case, Foa's case, possibly Lermoyez's case, and Ariza's description of the condition. In all the other cases there was distinct tumor formation of some kind. I believe these cases should be included, particularly where there is absence of ulceration. Ulceration, however, may occur in some part of the larynx late in the course of the disease. When this occurs it does not affect the diagnosis of this form of tuberculosis in any way, because the characteristic lesions, the tumor formations, are *not* involved in the ulcerative process. In the writer's case, it is true, slight ulceration of the cords developed just before death, but the characteristic circumscribed hypertrophies of the ventricular bands and the thickened arytenoids remained unaltered. Tumor formation occurring in this form of the disease is, perhaps, nothing more than a circumscribed hyperplasia of the tissues, with the typical histological changes.

A review of the recorded cases of the forms of hyperplastic tuberculosis of the larynx described in this paper brings out some interesting facts. We find where the age of patients was mentioned that adults between the ages of thirty-one and sixty-three years were mainly affected. About an equal number of men and women had the disease. The youngest case in which this form of tuberculosis occurred of which I could find any record was in a girl, aged twelve years (Josephsohn's case[12]). Gougenheim and Tessier are among the only other authors who have described this form of tuberculosis in children, and Mackenzie[1] and Heinze[32] are among the few authors who have described tuberculosis of the laryngeal muscles. The favorite sites for the laryngeal lesions are, in order of frequency, the vocal cords, ventriculus Morgagni, ventricular bands, epiglottis, arytenoids, and the anterior commissure. There was only one case in which the tumor formation was limited to the interarytenoid fold, and only two in which subglottic tumors occurred. The ventriculus Morgagni alone was involved in two cases, the cords alone in six, the ventricular bands alone in two, the epiglottis alone in some of Moser's[21] cases, and the anterior commissure alone in three. The epiglottis was involved with other parts of the larynx in three cases, the epiglottis and arytenoids together in one case, the arytenoids and cords together in one, and the ventricular bands and cords together in one. Mention is made of pulmonary tuberculosis in the majority of the cases. In the few cases before mentioned in which no evidence of pulmonary tuberculosis was found there is no mention of autopsies, so that this fact cannot be considered of much importance.

TREATMENT. Only one phase of the treatment will be considered, and that is a proper climate. I firmly believe, with Chappell,[43] that *any* chance should be taken in a good climate, rather than the best treatment in a poor climate. The climate in the Hudson Valley, near Albany, is certainly poor enough. For this particular form of the disease proper treatment in a good climate would be ideal, because ulceration is either *entirely* absent or does not develop until very late in the course of the disease. I am convinced, in considering my own case, that if the patient had gone to Denver and remained there he would be alive to-day. Another important point to consider in such cases is that in these early forms physical examination of the lungs is sometimes negative. They are certainly more favorable cases for a change of climate than the cases of laryngeal tuberculosis usually seen.

CONCLUSIONS. (*a*) Hypertrophic or hyperplastic tuberculosis of the larynx must be considered a distinct and unusual form of the disease.

(*b*) As a rule, there is no ulceration, but there *may* be some late in the course of the disease.

(*c*) Ulceration may be present at the same time as the hyperplasia of the tissues in some part of the larynx, but the characteristic circumscribed hypertrophies and tumor formations do not break down.

(*d*) It is practically always secondary to the pulmonary involvement, but there appears to be some evidence in support of the statement that particularly this form of tuberculosis may at times be primary.

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OBSTRUCTION OF THE BOWELS AND PERITONITIS DUE TO A STRANGULATED MECKEL DIVERTICULUM.

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THE present-day method of early opening of the abdomen upon the presentation of certain symptoms which are considered indicative of operation has done much to advance the diagnosis of intra-abdominal conditions and to abolish the former frequent and indefinite diagnoses of "peritonitis" and "obstruction of the bowels." These terms for years have obscured a multitude of primary causes which are now being revealed and which formerly only came to light in the post-mortem room. Early operation has not only revealed the primary cause of the trouble, but it has done so at a time when the life of the patient could